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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/510,768

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EXAMINER

BERNSHTEYN, MICHAEL

ART UNIT

PAPER NUMBER

1713

MAIL DATE

DELIVERY MODE

05/14/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/510,768

Applicant(s)

KOJIMA ET AL.

Examiner

Michael Bernshteyn

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-17 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This Office Action follows a response filed on April 23, 2007.

Claims 1-12 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on April 23, 2007.

Applicant's election without traverse of claims 13-17 in the reply filed on April 23, 2007 is acknowledged.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 13-17 are active.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyagawa et al. (JP 2002-228805)

With regard to the limitations of claims 13 and 16, Miyagawa discloses that a resin joined optical element has a base material and a **resin layer formed on the base material** (abstract). As the base material, inorganic **glass** and organic glass are used (page 3, [0017]). The resin, which constitutes the resin layer is not limited, it can be a thermosetting resin such as epoxy resin, urethane resin, unsaturated polyester resin,

and etc. or a thermoplastic resin, such as photosensitive acrylic resin, methacrylic resin, polymethymethacrylate, polystyrene, polycarbonate, etc. (page 3, [0019]).

Miyagawa discloses that as shown in drawing 5, performed **silane coupling agent** raises adhesion with resin (page 6, [0036]).

Miyagawa discloses that a resin assembling-die optical element joins the resin layer to the front face of the base material, which consists of glass etc. This resin assembling-die optical element is manufactures by the approaches, such as the compound-die aspheric surface casting method, which forms the resin layer of a request configuration in the base material front face, by pouring in and stiffening a resin constituent (a resin precursor constituent being included) between the base material and the die using dice (metal mold etc.). On these descriptions, the lens manufactured by this compound-die aspheric surface casting method, can be considered as instantly claimed a lens system (page 1, [0005]).

With regard to the limitations of claims 14 and 17, Miyagawa discloses that the maximum of the resin thickness is 850 micrometers or more, preferably 1 mm or more, which is within the claimed range (page 2, [0011]).

With regard to the limitations of claim 15, Miyagawa discloses that as shown in drawing 1, the maximum thickness 12 of the resin layer 11 is 4 or more times of the minimum thickness 13, which is within the claimed range (page 3, [0016]).

Therefore, all the limitations of claims 13-17 are met by Miyagawa.

4. Claims 13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hashimoto et al. (JP 63-110410).

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With regard to the limitations of claims 13 and 16, Hashimoto discloses that a **resin layer 20** of a composite type aspherical lens consisting of the **glass substrate 10** formed as, for example, biconvex lens and the resin layer 20 formed of the polymer layer of an acrylic UV curing resin is formed on **a face** of 11. After the face 11 and face 14 are treated with a **silane coupling agent**, the resin layer 20 and the 2<sup>nd</sup> part 21, which is part thereof are tightly adhered and formed thereon. The end 21 of the resin layer 20 presses the **glass lens 10** from the outer periphery of the lens 10 and, therefore, the adhesiveness between the lens 10 and the resin layer 20 is improved. The exfoliation of the resin layer even after the long-time resting in the light-moisture environment is thereby obviated (abstract).

5. Claims 13, 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiba (U. S. Patent 5,400,182).

With regard to the limitations of claims 13 and 16, Chiba discloses that in order to provide an optical element with an aspheric surface, as well as a process by which the optical element can be mass-produced with high efficiency and consistent precision, the improved optical element with an aspheric surface includes a glass substrate and an overlying light-transmissive resin layer worked to have an aspheric surface. This optical element can be produced by molding a light-transmissive resin composition as it is cured between a glass substrate and a mold having an aspheric surfaced shape (abstract).

Chiba discloses that epoxy resins are particularly preferred. Advantageous epoxy resins are those of bisphenol A type, bisphenol AD type and bisphenol F type, which are

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cured with an acid anhydride, an amine or any other curing agents. Acid anhydrides that can be used as curing agents include hexahydrophthalic anhydride and methyl hexahydrophthalic anhydride, and amines that can be used as curing agents include aliphatic polyamines, polyaminoamides, aromatic diamines, alicyclic diamines and imidazoles. Other curing agents that can be used include phenolic resins, amino resins, mercaptan compounds, dicyanodiamides and Lewis acid complex compounds (col. 2, lines 41-54).

The light-transmissive resin layer may be formed directly on the glass substrate to produce a composite optical element with an aspheric surface that has good adhesion between the substrate and the resin layer. The adhesion between the two members can be further enhanced by preliminarily forming a layer of **silane coupling agent** on the **glass substrate**. Any known silane coupling agent may be used and examples include silane compounds such as  $\gamma$ -glycidoxytrimethoxysilane,  $\gamma$ -glycidoxypropyltrimethoxysilane,  $\gamma$ -glycidoxypropyltriethoxysilane,  $\gamma$ -glycidoxypropyldimethoxysilane,  $\gamma$ -(3,4-epoxycyclohexyl)ethyltrimethoxysilane,  $\gamma$ -methacryloxypropyltrimethoxysilane, and  $\gamma$ -methacryloxypropylmethyl-dimethoxysilane, as well as the products of their hydrolysis. These silane coupling agents may be used either on their own or as admixtures (col. 3, lines 10-26).

With regard to the limitations of claim 15, Chiba exemplifies how to form a resin layer having a central thickness of 100  $\mu\text{m}$  and a maximum resin thickness of 600  $\mu\text{m}$  (examples 2 and 3, col. 4, lines 15-57), having ratio of maximum thickness/minimum thickness 6, which is within the claimed range.

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6. Claims 13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Karita (U. S. Patent Application Publication 2003/0099783).

With regard to the limitations of claims 13 and 16, Karita discloses that the ultraviolet-curable resin fluid used for obtaining aspheric lens should be a photopolymeric acrylate-based ultraviolet-curable resin fluid, which is cured by a radical polymeric reaction (page 4, [0047]). Preferably, the surface of the lens 11 should be silane-coupled in advance to increase the adhesiveness between the lens 11 and the molded resin layer 10A. The **silane coupling agent** can be diluted to a 2 weight % ethanol solution (page 4, [0049]).

A composite aspheric face was produced by using as the concave lens to constitute the base of the aspheric lens a **glass lens** (page 5, [0061]).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael Bernshteyn  
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05/10/2007

  
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